

***Ensuring the Integrity
of
The LNG Supply Chain***

SIGTTO

**A Presentation to The California Resources
Agency**

Roger J Roue – Technical Adviser - SIGTTO

SIGTTO MEMBERS OWN or OPERATE

- **159 LNGCs with a total capacity of 18 mill m3**
- **13 of the 17 LNG Export Terminals**
- **37 of the 47 operational LNG Import Terminals**
- **All 20 LNGCs due for delivery in 2005**
- **70% of World LPGC Capacity**
- **79 bulk LPG terminals**

Purpose of SIGTTO

SIGTTO has been organised to encourage safe and responsible operation of liquefied gas tankers and marine terminals handling liquefied gas; to develop advice and guidance for best industry practice among its members and promote criteria for best practice to all who have responsibilities for, or an interest in, the continuing safety of gas tankers and terminals.

HISTORY of LNG TRANSPORT

- **1959 – 1st Cargo by Sea**
- **1964 – 1st Commercial Cargo into UK**
- **1969 – 1st Exports from Alaska to Japan**
- **1971 – 1st Imports into Boston**
- **1989 – Annual deliveries exceed 100 mill m3**
- **1999 – Annual deliveries exceed 200 mill m3**
- **2004 – Annual deliveries 287 mill m3**
- **2005 – Total voyages exceeds 44,000**

MAJOR INCIDENTS

- 1944 – Cleveland Disaster
- 1979 – “*El Paso Paul Kayser*” Grounding
- 1980 – “*LNG Taurus*” Grounding
- 1989 – “*Tellier*” Mooring break-out
- 2002 – “*M. Ben Boulaid*” – Cargo spill
- 2004 – Skikda Explosion
- 2004 – “*Tenaga Lima*” - Grounding

ACHIEVING LNG SUPPLY CHAIN RELIABILITY

- **Initial High Standards**
- **Industry Technical Cooperation**
- **Learning From Experience**
- **First Class Standards & Codes**
- **Training**
- **Ship Vetting**
- **Written Procedures**

SETTING INITIAL STANDARDS



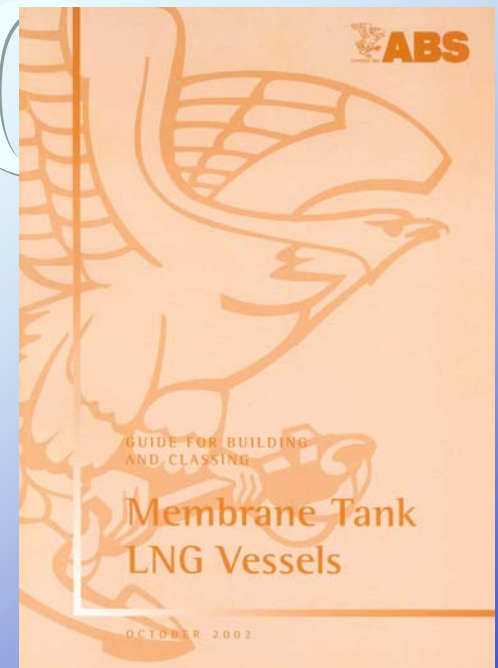
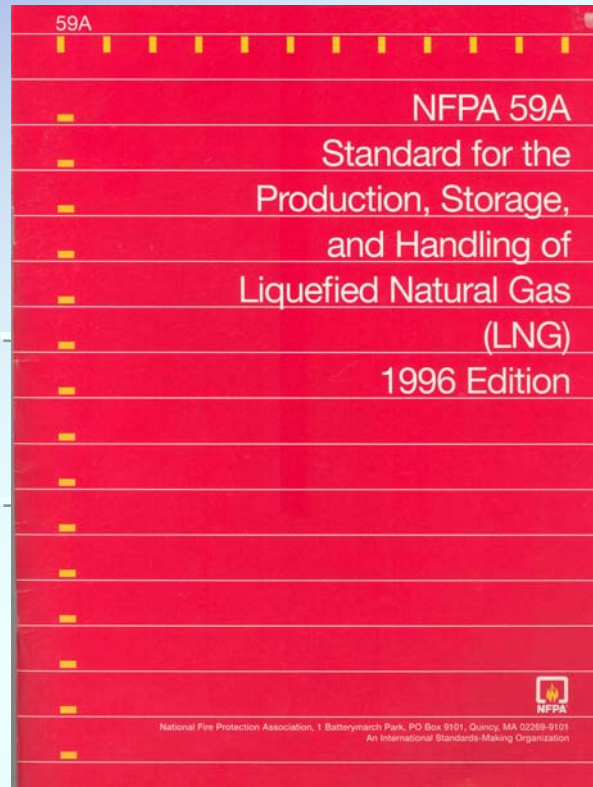
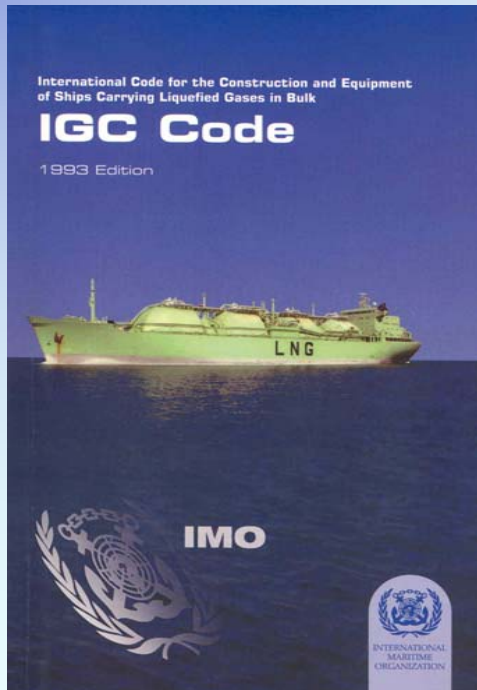
TECHNICAL CO-OPERATION

- **International Group of Liquefied Natural Gas Importers (GIIGNL)**
- **Gas Processors Association (GPA)**
- **Oil Companies International Forum (OCIMF)**
- **Society of International Gas Tanker & Terminal Operators (SIGTTO)**

LEARNING FROM EXPERIENCE



STANDARDS & CODES



TRAINING & RECRUITMENT

- IMO STCW Convention
- Company training

SIGTTO



SHIP VETTING & INSPECTION

- **Owner/Operator**
- **Classification Society**
- **Flag State**
- **Port State Control**
- **Inspecting/Vetting**

PROCEDURES

- **Operations Manuals**
- **Safety Pledge Letter (LNG)**
- **Ship/Shore Checklist**
- **Ship/Shore Liaison Meetings**
- **Permits to Work**

“PLAYING BY THE RULES”

“disasters are not the result of a lack of regulations, but the lack of compliance. First and foremost it is important to enforce the rules that already exist”

THANK YOU

SIGTTO

